



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,997	03/26/2004	Sanjiv Nanda	030645	8496
23596 7590 11/12/2009 QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121				
EXAMINER AJAYI, JOEL				
ART UNIT 2617		PAPER NUMBER		
NOTIFICATION DATE 11/12/2009		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

us-docketing@qualcomm.com

kascanla@qualcomm.com

nanm@qualcomm.com

Office Action Summary

Application No.

10/809,997

Applicant(s)

NANDA, SANJIV

Examiner

JOEL AJAYI

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/02)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 12, 2009 has been entered.

Response to Arguments

Applicant's arguments with respect to claims 1-52 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-25, 27-32, 37-45, 47, 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Haas (U.S. Patent Number: 6,304,556)** in view of **Belcea (U.S. Patent Application Number: 2002/0080750)**, and further in view of **Aihara et al. (U.S. Patent Application Number: 2002/0082035)**.

Consider **claim 1**; Haas discloses a server terminal configured to operate in a cluster on an ad hoc network backbone of an ad hoc network (column 8, line 37-column 9, line 63), comprising:

a user interface configured to transmit and receive communications during a call with a first terminal connected to an ad hoc network backbone (fig. 4; column 5, lines 2-5; column 8, line 37-65); and a processor (column 6, lines 58-62) configured to support an inter-cluster (56) call between second and third terminals (nodes) by establishing a route on the ad hoc network backbone for each communication packet transmitted from the second terminal to the third terminal (nodes) (fig. 4; column 8, line 37-65), wherein the ad hoc network comprises a plurality of clusters (24, 26, 28, and 30, fig. 3) (fig. 4; column 8, line 37-65), the cluster comprising at least two piconets (fig. 4; column 8, line 37-65), each of the piconets comprising at least one intra-cluster bridge terminal (56), a master terminal (cluster head; fig. 3) , and a member terminal (cluster node, fig. 3) slaved to the master terminal (fig. 4; column 8, line 37-65), wherein the

intra-cluster bridge terminal (56) is a member of the two piconets (e.g. 62 and 66; fig. 4) and is configured to form a communications link between the two piconets (e.g. 62 and 66, fig. 4) (fig. 4; column 8, line 37-65).

Except: the route on the ad hoc network backbone depends on whether the call is a first type of call or a second type of call that is different from the first type of call.

In an analogous art, Belcea discloses that the route on the ad hoc network backbone depends on whether the call is a first type of call (video) or a second type of call (voice) that is different from the first type of call (paragraph 13).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas by including a method of determining a route based on a type of call, as taught by Belcea, for the purpose of providing an efficient ad-hoc system.

Haas and Belcea disclose the claimed invention except for each of the clusters comprises at least two piconets.

In an analogous art Aihara discloses that each of the clusters (piconet) comprises at least two piconets (par. 71).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Haas and Belcea by including clusters with multiple piconet, as taught by Aihara, since it has been held that mere duplication of the essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Besides, applicant states in the specification, in par. 22, that a cluster refers to a group of *one or more* piconets.

Consider **claim 2**; Haas discloses that the processor is further configured to establish the same route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call for the first type of call, and to establish a different route for at least two of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call for the second type of call (column 8, line 37-column 9, line 63; Belcea paragraph 13).

Consider **claims 3, 15**; Haas discloses that the processor is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by constructing a network backbone topology map and selecting the established route based on information in the network backbone topology map (column 8, line 37-column 9, line 63).

Consider **claims 4, 16**; Haas discloses that the processor is further configured to select the established route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call as a function of the number of intermediary clusters between the second and third terminals along the selected established route for such transmission (column 8, line 37-column 9, line 63).

Consider **claims 5, 17**; Haas discloses that the processor is further configured to select the established route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call as a function of the energy of such transmission (power) (column 2, lines 36-43; column 8, line 37-column 9, line 63).

Consider **claims 6, 18, 39**; Haas discloses that the processor is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by mapping the third terminal to a primary route on the ad hoc network backbone to a first adjacent cluster and a secondary route on the ad hoc network backbone to a second adjacent cluster, and selecting the primary route or secondary route (column 8, line 37-column 9, line 63).

Consider **claims 7, 20, 40**; Haas discloses that the processor is further configured to select the primary route during the first type of inter-cluster call, and select either the primary or secondary route during the second type of call, the selection of the primary or secondary route being based on the loading of the ad hoc network backbone (column 6, lines 58-62; column 8, line 37-column 9, line 63).

Consider **claims 8, 21, 41**; Haas discloses that the processor is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by mapping the first adjacent cluster to a first transmitting gateway and a master terminal for the first transmitting gateway, and mapping the secondary route to a second transmitting gateway and a master terminal for the second transmitting gateway (column 8, line 37-column 9, line 63).

Consider **claims 9, 22, 42**; Haas discloses that the processor is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by communicating with the master terminal mapped to the adjacent cluster corresponding to the selected one of the primary and secondary routes to support intra-cluster scheduling and forwarding of such communication packet from the

second terminal to the transmitting gateway mapped to such corresponding adjacent cluster (column 8, line 37-column 9, line 63).

Consider **claims 10, 23**; Haas discloses that the processor is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call using a network address assigned to third terminal, and received from the network backbone in response to a location request (column 8, line 37-column 9, line 63).

Consider **claims 11, 24**; Haas discloses that the processor is further configured to establish the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call using a network address assigned to third terminal, and stored in the cache (column 8, lines 5-10, line 37-column 9, line 63).

Consider **claim 12**; Haas discloses a method of communications on a server terminal configured to operate in a cluster on an ad hoc network backbone (column 8, line 37 - column 9, line 63), comprising:

Transmitting and receiving communications at the server terminal during a call with a first terminal connected to an ad hoc network backbone of an ad hoc network (column 5, lines 2-5; column 8, line 37-column 9, line 44); and supporting an inter-cluster call between second and third terminals by establishing a route on the ad hoc network backbone for each communication packet transmitted from the second terminal to the third terminal (column 8, line 37-column 9, line 44), wherein the ad hoc network comprises a plurality of clusters (24, 26, 28, and 30, fig. 3) (fig. 4; column 8, line 37-65), the cluster comprising at least two piconets (fig. 4; column 8, line 37-65), each of the piconets comprising at least one intra-cluster bridge terminal

(56), a master terminal (cluster head; fig. 3) , and a member terminal (cluster node, fig. 3) slaved to the master terminal (fig. 4; column 8, line 37-65), wherein the intra-cluster bridge terminal (56) is a member of the two piconets (e.g. 62 and 66; fig. 4) and is configured to form a communications link between the two piconets (e.g. 62 and 66, fig. 4) (fig. 4; column 8, line 37-65).

Except: the route on the ad hoc network backbone depends on whether the call is a first type of call or a second type of call that is different from the first type of call.

In an analogous art, Belcea discloses that the route on the ad hoc network backbone depends on whether the call is a first type of call (video) or a second type of call (voice) that is different from the first type of call (paragraph 13).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas by including a method of determining a route based on a type of call, as taught by Belcea, for the purpose of providing an efficient ad-hoc system.

Haas and Belcea disclose the claimed invention except for each of the clusters comprises at least two piconets.

In an analogous art Aihara discloses that each of the clusters (piconet) comprises at least two piconets (par. 71).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Haas and Belcea by including clusters with multiple piconet, as taught by Aihara, since it has been held that mere duplication of the essential

working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Besides, applicant states in the specification, in par. 22, that a cluster refers to a group of *one* or more piconets.

Consider **claim 13**; Haas discloses that the same route is established for each of the communication packets transmitted from the second terminal to the third terminal during the first type of inter-cluster call (column 5, lines 2-5; column 8, line 37-column 9, line 63; Belcea paragraph 13).

Consider **claim 14**; Haas discloses that a different route is established for at least two of the communication packets transmitted from the second terminal to the third terminal during the second type of inter-cluster call (column 5, lines 2-5; column 8, line 37-column 9, line 63; Belcea paragraph 13).

Consider **claim 19**; Haas discloses that the primary route is selected for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call (column 5, lines 2-5; column 8, line 37-column 9, line 63).

Consider **claim 25**; Haas discloses a server terminal configured to operate in a cluster on an ad hoc network backbone (column 8, line 37 - column 9, line 63), comprising:

Means for a user to participate in a call with a first terminal connected to an ad hoc network backbone of an ad hoc network (column 5, lines 2-5; column 8, line 37-column 9, line 44); and means for establishing a route on the ad hoc network backbone for each communication packet transmitted from a second terminal to a third terminal during an inter-cluster call (column 5, lines 2-5; column 8, line 37-column 9, line 44), wherein the ad hoc network comprises a

plurality of clusters (24, 26, 28, and 30, fig. 3) (fig. 4; column 8, line 37-65), the cluster comprising at least two piconets (fig. 4; column 8, line 37-65), each of the piconets comprising at least one intra-cluster bridge terminal (56), a master terminal (cluster head; fig. 3) , and a member terminal (cluster node, fig. 3) slaved to the master terminal (fig. 4; column 8, line 37-65), wherein the intra-cluster bridge terminal (56) is a member of the two piconets (e.g. 62 and 66; fig. 4) and is configured to form a communications link between the two piconets (e.g. 62 and 66, fig. 4) (fig. 4; column 8, line 37-65).

Except: the route on the ad hoc network backbone depends on whether the call is a first type of call or a second type of call that is different from the first type of call.

In an analogous art, Belcea discloses that the route on the ad hoc network backbone depends on whether the call is a first type of call (video) or a second type of call (voice) that is different from the first type of call (paragraph 13).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas by including a method of determining a route based on a type of call, as taught by Belcea, for the purpose of providing an efficient ad-hoc system.

Haas and Belcea disclose the claimed invention except for each of the clusters comprises at least two piconets.

In an analogous art Aihara discloses that each of the clusters (piconet) comprises at least two piconets (par. 71).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Haas and Belcea by including clusters with

multiple piconet, as taught by Aihara, since it has been held that mere duplication of the essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Besides, applicant states in the specification, in par. 22, that a cluster refers to a group of *one* or more piconets.

Consider **claims 27, 37**; Haas discloses that the processor establishes a route on the ad hoc network backbone between an inter-cluster bridge terminal in a first cluster and inter-cluster bridge terminal in a second network (column 8, line 37-65).

Consider **claims 28, 38**; Haas discloses that the inter-cluster bridge terminals are Address, Location, and Route (ALR) servers (column 8, line 37 - column 9, line 63).

Consider **claim 29**; Haas discloses that establishing a route on the ad hoc network includes establishing a between an inter-cluster bridge terminal in a first cluster and inter-cluster bridge terminal in a second network (column 8, line 37-65).

Consider **claim 30**; Haas discloses that establishing a route between an inter-cluster bridge terminal in the first cluster and inter-cluster bridge terminal in the second network includes establishing a route between Address, Location, and Route (ALR) servers (column 8, line 37 - column 9, line 63).

Consider **claim 31**; Haas discloses at least one processor for communications on a server terminal configured to operate in a cluster on an ad hoc network backbone (column 8, line 37 - column 9, line 63), comprising:

A first module for transmitting and receiving communications at the server terminal during a call with a first terminal connected to an ad hoc network backbone of an ad hoc network

(column 5, lines 2-5; column 8, line 37-column 9, line 44); a second module for supporting an inter-cluster call between second and third terminals by establishing a route on the ad hoc network backbone for each communication packet transmitted from the second terminal to the third terminal (column 8, line 37-column 9, line 44), wherein the ad hoc network a plurality of clusters (24, 26, 28, and 30, fig. 3) (fig. 4; column 8, line 37-65), the cluster comprising at least two piconets (fig. 4; column 8, line 37-65), each of the piconets comprising at least one intra-cluster bridge terminal (56), a master terminal (cluster head; fig. 3) , and a member terminal (cluster node, fig. 3) slaved to the master terminal (fig. 4; column 8, line 37-65), wherein the intra-cluster bridge terminal (56) is a member of the two piconets (e.g. 62 and 66; fig. 4) and is configured to form a communications link between the two piconets (e.g. 62 and 66, fig. 4) (fig. 4; column 8, line 37-65).

Except: the route on the ad hoc network backbone depends on whether the call is a first type of call or a second type of call that is different from the first type of call.

In an analogous art, Belcea discloses that the route on the ad hoc network backbone depends on whether the call is a first type of call (video) or a second type of call (voice) that is different from the first type of call (paragraph 13).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas by including a method of determining a route based on a type of call, as taught by Belcea, for the purpose of providing an efficient ad-hoc system.

Haas and Belcea disclose the claimed invention except for each of the clusters comprises at least two piconets.

In an analogous art Aihara discloses that each of the clusters (piconet) comprises at least two piconets (par. 71).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Haas and Belcea by including clusters with multiple piconet, as taught by Aihara, since it has been held that mere duplication of the essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Besides, applicant states in the specification, in par. 22, that a cluster refers to a group of *one* or more piconets.

Consider **claim 32**; Haas discloses a computer program product for communications on a server terminal configured to operate in a cluster on an ad hoc network backbone (column 8, line 37 - column 9, line 63), comprising:

A computer-readable storage medium comprising: a first set of codes for causing a computer to transmit and receive communications at the server terminal during a call with a first terminal connected to an ad hoc network backbone of an ad hoc network (column 5, lines 2-5; column 8, line 37-column 9, line 44); a second set of codes for causing a computer to support an inter-cluster call between second and third terminals by establishing a route on the ad hoc network backbone for each communication packet transmitted from the second terminal to the third terminal (column 8, line 37-column 9, line 44), wherein the ad hoc network comprises a plurality of clusters (24, 26, 28, and 30, fig. 3) (fig. 4; column 8, line 37-65), the cluster comprising at least two piconets (fig. 4; column 8, line 37-65), each of the piconets comprising at least one intra-cluster bridge terminal (56), a master terminal (cluster head; fig. 3), and a

member terminal (cluster node, fig. 3) slaved to the master terminal (fig. 4; column 8, line 37-65), wherein the intra-cluster bridge terminal (56) is a member of the two piconets (e.g. 62 and 66; fig. 4) and is configured to form a communications link between the two piconets (e.g. 62 and 66, fig. 4) (fig. 4; column 8, line 37-65).

Except: the route on the ad hoc network backbone depends on whether the call is a first type of call or a second type of call that is different from the first type of call.

In an analogous art, Belcea discloses that the route on the ad hoc network backbone depends on whether the call is a first type of call (video) or a second type of call (voice) that is different from the first type of call (paragraph 13).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas by including a method of determining a route based on a type of call, as taught by Belcea, for the purpose of providing an efficient ad-hoc system.

Haas and Belcea disclose the claimed invention except for each of the clusters comprises at least two piconets.

In an analogous art Aihara discloses that each of the clusters (piconet) comprises at least two piconets (par. 71).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Haas and Belcea by including clusters with multiple piconet, as taught by Aihara, since it has been held that mere duplication of the essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Besides, applicant states in the specification, in par. 22, that a cluster refers to a group of *one* or more piconets.

Consider **claims 43-45, 47-48**; Belcea discloses that the route on the ad hoc network backbone is configured to pass through a first picocell for the first type of call (route 4) and configured not to pass through the first picocell for the second type of call (route 1 for voice) (par. 161).

Claims 26, 33-36, 46, 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Haas (U.S. Patent Number: 6,304,556)** in view of **Juitt et al. (U.S. Patent Number: 7,042,988)**, further in view of **Belcea (U.S. Patent Application Number: 2002/0080750)**, and further in view of **Aihara et al. (U.S. Patent Application Number: 2002/0082035)**.

Consider **claim 26**; Haas discloses a method of communications on a primary server terminal configured to serve a plurality of terminal in a cluster on an ad hoc network backbone (column 8, line 37 - column 9, line 63), the method comprising:

Using the primary server terminal to support a plurality of inter-cluster calls for a number of the terminals in the cluster by establishing a route on an ad hoc network backbone for each of the communication packets transmitted by each of the terminals engaged in one of the inter-cluster calls (column 5, lines 2-5; column 8, line 37-column 9, line 44); the ad hoc network comprises a plurality of clusters (24, 26, 28, and 30, fig. 3) (fig. 4; column 8, line 37-65), the cluster comprising at least two piconets (fig. 4; column 8, line 37-65), each of the piconets comprising at least one intra-cluster bridge terminal (56), a master terminal (cluster head; fig. 3) , and a member terminal (cluster node, fig. 3) slaved to the master terminal (fig. 4; column 8, line 37-65), wherein the intra-cluster bridge terminal (56) is a member of the two piconets (e.g. 62

and 66; fig. 4) and is configured to form a communications link between the two piconets (e.g. 62 and 66, fig. 4) (fig. 4; column 8, line 37-65).

Except: dynamically designating one of the terminals in the cluster as a backup server terminal in accordance to an ad hoc protocol; detecting a server terminal failure; and processing a message received at the backup server terminal, the message being addressed to the primary server terminal.

In an analogous art, Juitt discloses dynamically designating one of the terminals in the cluster as a backup server terminal in accordance to an ad hoc protocol (an ad hoc protocol is an improvised and often impromptu protocol established for a specific purpose) (column 5, lines 5-25; column 17, lines 14-59); detecting a server terminal failure (column 5, lines 5-25; column 17, lines 14-37); and processing a message received at the backup server terminal, the message being addressed to the primary server terminal (column 5, lines 5-25; column 17, lines 14-37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas by including the processing of a server terminal failure, as taught by Juitt, for the purpose of efficiently managing data traffic in wireless networks.

Haas and Juitt disclose the claimed invention except: the route on the ad hoc network backbone depends on whether the call is a first type of call or a second type of call that is different from the first type of call.

In an analogous art, Belcea discloses that the route on the ad hoc network backbone depends on whether the inter-cluster call is a first type of call (video) or a second type of call (voice) that is different from the first type of call (paragraph 13).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas and Juitt by including a method of determining a route based on a type of call, as taught by Belcea, for the purpose of providing an efficient ad-hoc system.

Haas, Juitt, and Belcea disclose the claimed invention except for each of the clusters comprises at least two piconets.

In an analogous art Aihara discloses that each of the clusters (piconet) comprises at least two piconets (par. 71).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Haas, Juitt, and Belcea by including clusters with multiple piconet, as taught by Aihara, since it has been held that mere duplication of the essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Besides, applicant states in the specification, in par. 22, that a cluster refers to a group of *one* or more piconets.

Consider **claim 33**; Haas discloses at least one processor for communications on a primary server terminal configured to serve a plurality of terminal in a cluster on an ad hoc network backbone (column 8, line 37 - column 9, line 63), the method comprising:

A first module for using the primary server terminal to support a plurality of inter-cluster calls for a number of the terminals in the cluster by establishing a route on an ad hoc network backbone for each of the communication packets transmitted by each of the terminals engaged in one of the inter-cluster calls (column 5, lines 2-5; column 8, line 37-column 9, line

44); wherein the ad hoc network comprises a plurality of clusters (24, 26, 28, and 30, fig. 3) (fig. 4; column 8, line 37-65), the cluster comprising at least two piconets (fig. 4; column 8, line 37-65), each of the piconets comprising at least one intra-cluster bridge terminal (56), a master terminal (cluster head; fig. 3), and a member terminal (cluster node, fig. 3) slaved to the master terminal (fig. 4; column 8, line 37-65), wherein the intra-cluster bridge terminal (56) is a member of the two piconets (e.g. 62 and 66; fig. 4) and is configured to form a communications link between the two piconets (e.g. 62 and 66, fig. 4) (fig. 4; column 8, line 37-65).

Except: a second module for dynamically designating one of the terminals in the cluster as a backup server terminal in accordance to an ad hoc protocol; a third module for detecting a server terminal failure; a fourth module for processing a message received at the backup server terminal, the message being addressed to the primary server terminal.

In an analogous art, Juitt discloses a second module for dynamically designating one of the terminals in the cluster as a backup server terminal in accordance to an ad hoc protocol (an ad hoc protocol is an improvised and often impromptu protocol established for a specific purpose) (column 5, lines 5-25; column 17, lines 14-59); a third module for detecting a server terminal failure (column 5, lines 5-25; column 17, lines 14-37); a fourth module for processing a message received at the backup server terminal, the message being addressed to the primary server terminal (column 5, lines 5-25; column 17, lines 14-37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas by including the processing of a server terminal failure, as taught by Juitt, for the purpose of efficiently managing data traffic in wireless networks.

Haas and Juitt disclose the claimed invention except: the route on the ad hoc network backbone depends on whether the call is a first type of call or a second type of call that is different from the first type of call.

In an analogous art, Belcea discloses that the route on the ad hoc network backbone depends on whether the inter-cluster call is a first type of call (video) or a second type of call (voice) that is different from the first type of call (paragraph 13).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas and Juitt by including a method of determining a route based on a type of call, as taught by Belcea, for the purpose of providing an efficient ad-hoc system.

Haas, Juitt, and Belcea disclose the claimed invention except for each of the clusters comprises at least two piconets.

In an analogous art Aihara discloses that each of the clusters (piconet) comprises at least two piconets (par. 71).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Haas, Juitt, and Belcea by including clusters with multiple piconet, as taught by Aihara, since it has been held that mere duplication of the essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Besides, applicant states in the specification, in par. 22, that a cluster refers to a group of *one* or more piconets.

Consider **claim 34**; Haas discloses a computer program product for communications on a server terminal configured to serve a plurality of terminals in a cluster on an ad hoc network backbone (column 8, line 37 - column 9, line 63), the method comprising:

A computer-readable storage medium comprising: a first set of codes for causing a computer to use the primary server terminal to support a plurality of inter-cluster calls for a number of the terminals in the cluster by establishing a route on an ad hoc network backbone for each of the communication packets transmitted by each of the terminals engaged in one of the inter-cluster calls (column 5, lines 2-5; column 8, line 37-column 9, line 44); wherein the ad hoc network comprises a plurality of clusters (24, 26, 28, and 30, fig. 3) (fig. 4; column 8, line 37-65), the cluster comprising at least two piconets (fig. 4; column 8, line 37-65), each of the piconets comprising at least one intra-cluster bridge terminal (56), a master terminal (cluster head; fig. 3) , and a member terminal (cluster node, fig. 3) slaved to the master terminal (fig. 4; column 8, line 37-65), wherein the intra-cluster bridge terminal (56) is a member of the two piconets (e.g. 62 and 66; fig. 4) and is configured to form a communications link between the two piconets (e.g. 62 and 66, fig. 4) (fig. 4; column 8, line 37-65).

Except: a second set of codes for causing a computer to dynamically designate one of the terminals in the cluster as a backup server terminal in accordance to an ad hoc protocol; a third set of codes for causing a computer to detect a server terminal failure; a fourth set of codes for causing a computer to process a message received at the backup server terminal, the message being addressed to the primary server terminal.

In an analogous art, Juitt discloses a second set of codes for causing a computer to dynamically designate one of the terminals in the cluster as a backup server terminal in

accordance to an ad hoc protocol (an ad hoc protocol is an improvised and often impromptu protocol established for a specific purpose) (column 5, lines 5-25; column 17, lines 14-59); a third set of codes for causing a computer to detect a server terminal failure (column 5, lines 5-25; column 17, lines 14-37); a fourth set of codes for causing a computer to process a message received at the backup server terminal, the message being addressed to the primary server terminal (column 5, lines 5-25; column 17, lines 14-37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas by including the processing of a server terminal failure, as taught by Juitt, for the purpose of efficiently managing data traffic in wireless networks.

Haas and Juitt disclose the claimed invention except: the route on the ad hoc network backbone depends on whether the call is a first type of call or a second type of call that is different from the first type of call.

In an analogous art, Belcea discloses that the route on the ad hoc network backbone depends on whether the inter-cluster call is a first type of call (video) or a second type of call (voice) that is different from the first type of call (paragraph 13).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas and Juitt by including a method of determining a route based on a type of call, as taught by Belcea, for the purpose of providing an efficient ad-hoc system.

Haas, Juitt, and Belcea disclose the claimed invention except for each of the clusters comprises at least two piconets.

In an analogous art Aihara discloses that each of the clusters (piconet) comprises at least two piconets (par. 71).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Haas, Juitt, and Belcea by including clusters with multiple piconet, as taught by Aihara, since it has been held that mere duplication of the essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Besides, applicant states in the specification, in par. 22, that a cluster refers to a group of *one* or more piconets.

Consider **claim 35**; Haas discloses an apparatus for communications on a primary server terminal configured to serve a plurality of terminal in a cluster on an ad hoc network backbone (column 8, line 37 - column 9, line 63), the method comprising:

Means for using the primary server terminal to support a plurality of inter-cluster calls for a number of the terminals in the cluster by establishing a route on an ad hoc network backbone for each of the communication packets transmitted by each of the terminals engaged in one of the inter-cluster calls (column 5, lines 2-5; column 8, line 37-column 9, line 44); wherein the ad hoc network comprises a plurality of clusters (24, 26, 28, and 30, fig. 3) (fig. 4; column 8, line 37-65), the cluster comprising at least two piconets (fig. 4; column 8, line 37-65), each of the piconets comprising at least one intra-cluster bridge terminal (56), a master terminal (cluster head; fig. 3) , and a member terminal (cluster node, fig. 3) slaved to the master terminal (fig. 4; column 8, line 37-65), wherein the intra-cluster bridge terminal (56) is a member of the two

piconets (e.g. 62 and 66; fig. 4) and is configured to form a communications link between the two piconets (e.g. 62 and 66, fig. 4) (fig. 4; column 8, line 37-65).

Except: means for dynamically designating one of the terminals in the cluster as a backup server terminal in accordance to an ad hoc protocol; means for detecting a server terminal failure; means for processing a message received at the backup server terminal, the message being addressed to the primary server terminal.

In an analogous art, Juitt discloses means for dynamically designating one of the terminals in the cluster as a backup server terminal in accordance to an ad hoc protocol (an ad hoc protocol is an improvised and often impromptu protocol established for a specific purpose) (column 5, lines 5-25; column 17, lines 14-59); means for detecting a server terminal failure (column 5, lines 5-25; column 17, lines 14-37); means for processing a message received at the backup server terminal, the message being addressed to the primary server terminal (column 5, lines 5-25; column 17, lines 14-37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas by including the processing of a server terminal failure, as taught by Juitt, for the purpose of efficiently managing data traffic in wireless networks.

Haas and Juitt disclose the claimed invention except: the route on the ad hoc network backbone depends on whether the call is a first type of call or a second type of call that is different from the first type of call.

In an analogous art, Belcea discloses that the route on the ad hoc network backbone depends on whether the inter-cluster call is a first type of call (video) or a second type of call (voice) that is different from the first type of call (paragraph 13).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas and Juitt by including a method of determining a route based on a type of call, as taught by Belcea, for the purpose of providing an efficient ad-hoc system.

Haas, Juitt, and Belcea disclose the claimed invention except for each of the clusters comprises at least two piconets.

In an analogous art Aihara discloses that each of the clusters (piconet) comprises at least two piconets (par. 71).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Haas, Juitt, and Belcea by including clusters with multiple piconet, as taught by Aihara, since it has been held that mere duplication of the essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Besides, applicant states in the specification, in par. 22, that a cluster refers to a group of *one* or more piconets.

Consider **claim 36**; Haas discloses a terminal system for communications comprising:

A primary server terminal used to support a plurality of inter-cluster calls for a number of the terminals in the cluster by establishing a route on an ad hoc network backbone for each of the communication packets transmitted by each of the terminals engaged in one of the inter-cluster

calls (column 5, lines 2-5; column 8, line 37-column 9, line 44); wherein the ad hoc network comprises a plurality of clusters (24, 26, 28, and 30, fig. 3) (fig. 4; column 8, line 37-65), the cluster comprising at least two piconets (fig. 4; column 8, line 37-65), each of the piconets comprising at least one intra-cluster bridge terminal (56), a master terminal (cluster head; fig. 3) , and a member terminal (cluster node, fig. 3) slaved to the master terminal (fig. 4; column 8, line 37-65), wherein the intra-cluster bridge terminal (56) is a member of the two piconets (e.g. 62 and 66; fig. 4) and is configured to form a communications link between the two piconets (e.g. 62 and 66, fig. 4) (fig. 4; column 8, line 37-65).

Except: a processor for dynamically designating one of the terminals in the cluster as a backup server terminal in accordance to an ad hoc protocol; detecting a server terminal failure; and processing a message received at the backup server terminal, the message being addressed to the primary server terminal.

In an analogous art, Juitt discloses a processor for dynamically designating one of the terminals in the cluster as a backup server terminal in accordance to an ad hoc protocol (an ad hoc protocol is an improvised and often impromptu protocol established for a specific purpose) (column 5, lines 5-25; column 17, lines 14-59); detecting a server terminal failure (column 5, lines 5-25; column 17, lines 14-37); and processing a message received at the backup server terminal, the message being addressed to the primary server terminal (column 5, lines 5-25; column 17, lines 14-37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas by including the processing of a server terminal

failure, as taught by Juitt, for the purpose of efficiently managing data traffic in wireless networks.

Haas and Juitt disclose the claimed invention except: the route on the ad hoc network backbone depends on whether the call is a first type of call or a second type of call that is different from the first type of call.

In an analogous art, Belcea discloses that the route on the ad hoc network backbone depends on whether the inter-cluster call is a first type of call (video) or a second type of call (voice) that is different from the first type of call (paragraph 13).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Haas and Juitt by including a method of determining a route based on a type of call, as taught by Belcea, for the purpose of providing an efficient ad-hoc system.

Haas, Juitt, and Belcea disclose the claimed invention except for each of the clusters comprises at least two piconets.

In an analogous art Aihara discloses that each of the clusters (piconet) comprises at least two piconets (par. 71).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Haas, Juitt, and Belcea by including clusters with multiple piconet, as taught by Aihara, since it has been held that mere duplication of the essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Besides, applicant states in the specification, in par. 22, that a cluster refers to a group of *one* or more piconets.

Consider **claims 46, 49-52**; Belcea discloses that the route on the ad hoc network backbone is configured to pass through a first picocell for the first type of call (route 4) and configured not to pass through the first picocell for the second type of call (route 1 for voice) (par. 161).

Conclusion

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Joel Ajayi whose telephone number is (571) 270-1091. The Examiner can normally be reached on Monday-Friday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

/Joel Ajayi/

Examiner, Art Unit 2617

/Lester Kincaid/

Supervisory Patent Examiner, Art Unit 2617